Please replace paragraph 2 on page 8 with the following:

A DNA-sequence encoding for the novel enzyme as defined in the patent claims is another aspect of the present invention. Preferably the DNA-sequence has a nucleotide sequence as given in the SEQ ID NOs. 2 or 4.

C2

The DNA sequence according to the present invention is preferably including a promoter and contained in an expression vector such as a plasmid, a cosmid or a virus.

IN THE CLAIMS

Please cancel claims 1-16 and add the following new claims:

Claim 17. An isolated enzyme characterized in that it has uracil-DNA glycosylase activity and is completely inactivated when heated above about 60°C and is not able to reactivate.

Claim 18. The enzyme according to claim 17 characterized in that it has an amino acid sequence as shown in SEQ ID NO:2 or SEQ ID NO:4, or a functional part thereof having uracil-DNA glycosylase activity.

Claim 19. The enzyme according to claim 17 characterized in that it is derived from an ectothermal organism adapted to environmental temperatures below 10°C.

C3

Claim 20. The enzyme according to claim 18 characterized in that it is derived from an ectothermal organism adapted to environmental temperatures below 10°C.

Claim 21. The enzyme according to claim 17 derived from an eukaryotic organism.

Claim 22. The enzyme according to claim 18 derived from an eukaryotic organism.

Claim 23. The enzyme according to claim 19 derived from an eukaryotic organism.

Claim 24. The enzyme according to claim 20 derived from an eukaryotic organism.

Claim 25. The enzyme according to claim 21 wherein the eukaryotic organism is Atlantic cod (*Gadus Morhua*).

Claim 26. The enzyme according to claim 22 wherein the eukaryotic organism is Atlantic cod (*Gadus Morhua*).

Claim 27. The enzyme according to claim 23 wherein the eukaryotic organism is Atlantic cod (*Gadus Morhua*).

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Claim 28. The enzyme according to claim 24 wherein the eukaryotic organism is Atlantic cod (*Gadus Morhua*).

Claim 29. The enzyme according to claim 17 further comprising a detectable label.